



# AEGIS PEO SC/AP ATD Proposals

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# COMPOSITE HELO HANGAR DOOR PANELS

- OBJECTIVE & REQUIREMENTS:
  - Develop affordable, low maintenance composite helo hangar door panels with improved performance and reliability.
    - Light weight
    - Easy operation in manual mode
    - Fire & smoke toxicity compliant
    - Improved Radar Cross Section (RCS) performance
    - Improved Electro Magnetic Interference (EMI) performance
    - Reduced Infrared Radiation (IR)
    - Pigmented resin to eliminate painting



# COMPOSITE HELO HANGAR DOOR PANELS

## ● PAYOFFS:

- Solves problems with:
  - Operation due to weight
  - Maintenance and panel corrosion
  - Fabrication
    - Arm assembly and panel welding
    - Sole source manufacturer
- Meets more objectives than other materials such as aluminum, stainless steel or titanium
- Reduces manning required for topside maintenance



# COMPOSITE HELO HANGAR DOOR PANELS

## ● RISKS:

- Prior composite programs do not address the stringent fire and structural requirements of this project
  - AEMS - material selection independent of fire requirement
  - Louvers - material not subjected to extreme structural loading
- Affordable fabrication may be unattainable because of material processability
  - Material selection critical for fire and smoke toxicity compliance
  - Material selection critical for structural requirements
- Joint seal technology must be developed to achieve RCS/EMI/IR and operational requirements



# COMPOSITE HELO HANGAR DOOR PANELS

- TRANSITION:
  - DDG-51 Class to transition ATD
    - ATD Duration: 12 months
    - Funding Level: \$1M
    - FY 98 or FY 99 ship for installation
    - POC: Barry Cole, PMS400D32  
(703) 602-3476 ext. 332



# REMOTE SOURCE LIGHTING for INTERIOR SPACES

- OBJECTIVE & REQUIREMENTS:
  - Develop and demonstrate technology critical for applying remote source lighting systems in interior spaces.
    - Reduce electrical circuitry
    - Reduce hazardous stowage
    - Maintain equal or better energy efficiency



# REMOTE SOURCE LIGHTING for INTERIOR SPACES

## ● PAYOFFS:

- Fulfills future surface ship specification requirement for RSL technology
- Reduced Life Cycle Costs
  - Less manpower required for bulb changeout
  - Reduced inventory/support structure
  - Elimination of high cost/maintenance fixtures (Explosionproof fixtures)
- Eliminate mercury & reduce hazardous material stowage
- Reduced cooling load
- Coactive installation of auxiliary sensors such as proximity and zebra sensors
- Overcome space constraints of conventional lighting



# REMOTE SOURCE LIGHTING for INTERIOR SPACES

## ● RISKS:

- Conventional fiber optic cabling may not be able to:
  - Reduce light intensity losses over extensive cable lengths required for Navy interior lighting
  - Reduce color loss/Improve spectral dependent attenuation (color retention)
  - Pass fire and smoke toxicity requirements
- Coupling technology joining the fiber and light engine is critical to achieve required lighting efficiency



# REMOTE SOURCE LIGHTING for INTERIOR SPACES

- TRANSITION:
  - DDG-51 Class to transition ATD
    - ATD Duration: 2 years
    - Funding Level: \$2.5M
    - Installation slated for DDG-86 (?)
    - POC: Barry Cole, PMS400D32  
(703) 602-3476 ext. 332



# COMPOSITE HELO HANGAR

- OBJECTIVE & REQUIREMENTS:
  - Develop an affordable, low maintenance composite helo hangar to reduce topside weight.
    - 30% reduction in hangar weight
    - Fire & smoke toxicity compliant
    - Improved Radar Cross Section (RCS) performance
    - Improved Electro Magnetic Interference (EMI) performance
    - Reduced Infrared Radiation (IR)
    - Pigmented resin to eliminate painting



# COMPOSITE HELO HANGAR

## ● PAYOFFS:

- Reduced maintenance and corrosion
  - Elimination of dissimilar materials on outfitting structures (ladders)
- Reduced topside weight
- Enhances warfighting capability better than other materials such as aluminum, stainless steel or titanium
- Reduces manning required for topside maintenance
- Demonstrates fabricability of large topside composite structures



# COMPOSITE HELO HANGAR

## ● RISKS:

- Prior composite programs do not address the stringent fire and structural requirements of this project
- Affordable fabrication and repair may be unattainable because of composite processability
- Thermal expansion/vibration attenuation rates may impact tolerances with respect to adjacent structures
- Magnetic signature differences may require appreciable modification of degaussing system
- Fastening of ancillary components within the hangar would need to be developed
- Resistance to ballistic impact and SLS blast



# COMPOSITE HELO HANGAR

- TRANSITION:
  - DDG-51 Class to transition ATD
    - ATD Duration: 3 years
    - Funding Level: \$20M
    - Installation slated for DDG-86
    - POC: Barry Cole, PMS400D32  
(703) 602-3476 ext. 332



# STANDARDIZED RESILIENT SHOCK MOUNTS TO SUPPORT COTS/NDI EQUIPMENT

## ● OBJECTIVE & REQUIREMENTS:

- Develop, classify, and certify resilient shock mounts to be universally used on COTS/NDI equipment.
  - Non-metallic/non-corroding material
    - Pigmented to eliminate painting
  - Light weight
  - Improved service life
  - Improved shock attenuation performance



# STANDARDIZED RESILIENT SHOCK MOUNTS TO SUPPORT COTS/NDI EQUIPMENT

## ● PAYOFFS:

- Reduced Life Cycle Costs
  - Reduced inventory/support structure through standardization and extended service life
  - Reduced maintenance and corrosion
- Improved acoustic performance in response to shock and vibration attenuation
- Reduced weight
- Autonomy from procurement of military standard equipment



# STANDARDIZED RESILIENT SHOCK MOUNTS TO SUPPORT COTS/NDI EQUIPMENT

## ● RISKS:

- Prior efforts to standardize resilient shock mounts have been funded under 6.1, 6.2 and SBIRs for equipment weights ranging from 25 lbs. -10,000 lbs. but have not been certified
- Non-metallic mounts may not be able to:
  - Meet strength requirements without major dimensional changes
  - Meet damping material adhesion requirements
  - Withstand curing temperatures for damping materials



# STANDARDIZED RESILIENT SHOCK MOUNTS TO SUPPORT COTS/NDI EQUIPMENT

- TRANSITION:
  - DDG-51 Class to transition ATD
    - ATD Duration: X months
    - Funding Level: \$XM
    - X ship for installation
    - POC: Barry Cole, PMS400D32  
(703) 602-3476 ext. 332



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- OBJECTIVE & REQUIREMENTS:
  - Develop,



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- PAYOFFS:
  - Reduced



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- RISKS:
  - Prior



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## ● TRANSITION:

### – DDG-51 Class to transition ATD

- ATD Duration: X months
- Funding Level: \$XM
- X ship for installation
- POC: Barry Cole, PMS400D32  
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